

A Climatology of Windstorms in the Western Pacific Northwest, 1948-2004

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High wind is defined by the National Weather Service as an average wind of 18 m/s (35 knots) or greater, or gusts to 26 m/s (58 knots) or greater. Approximately once every two years, winds of this magnitude strike inland areas of the Western Pacific Northwest, including the Puget Lowlands. A survey of events that have produced high wind criteria gusts at inland locations of Western Oregon and Washington from 1948-2004 has been undertaken. Focus has been on storm peak gust speed and sea-level atmospheric pressure response. Most strong windstorms, regardless of minimum central pressure, appear to generate maximum gusts in the 25 to 34 m/s range at interior locations. This may be due to the fact that maximum pressure gradients during windstorms aren't highly correlated with an extratropical cyclone's central pressure; most high-wind generating storms, regardless of central pressure, seem to generate similar peak gradients. Gusts higher than 34 m/s are rare, and appear to be due to quite unusual circumstances. The February 13, 1979 windstorm that sunk the Hood Canal Floating Bridge with reported winds in excess of 40 m/s is an example of an outlier, as is the infamous Columbus Day storm of 1962, which produced a gust of 44 m/s at Bellingham, and readings in excess of 50 m/s in the Willamette Valley. The circumstances behind these rare "great" storms are unique to each event; suspected causes are explored.